

REMARKS

This application is amended in a manner believed to place it in condition for allowance at the time of the next Official Action.

Claims 1 and 4 are amended.

Support for the amended claims may be found, for example, at page 9, line 6 - page 10, line 8.

Claims 2 and 3 are canceled.

Claims 1 and 4-18 remain pending in the application.

The Official Action objects to claim 4 under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim.

The position of the Official Action is that claim 3 recites a dopant comprising at least an acid having a single site of a group which dissociates the proton, whereas claim 4 recites acids that include more than one proton dissociated site.

Claim 3 is canceled, and these features are presently recited in claim 1. Claim 4 is amended to be in independent form and recites a dopant comprising an acid having at least a single site of a group which dissociates a proton.

Therefore, withdrawal of the objection is respectfully requested.

Claims 1-6, 11-15 are rejected under 35 USC 102(b) as being anticipated by HIRAI et al. JP 61-206170 (HIRAI). This rejection is respectfully traversed.

The position of the Official Action is that the English abstract of HIRAI teaches polymers or copolymers of diphenyl amine or triphenyl amine, and the Japanese disclosure illustrates various structures formed by diphenyl amine, i.e., formulas (1) - (4) on page 352 of the Japanese document. Additionally, the Official Action states that the polymer is doped with perchloric acid according to page 353 of the Japanese document.

However, the sections of the Japanese document relied on in the Official Action fail to teach the conductive polymer comprising a polybiphenylaniline of the claimed general formula that is doped with a dopant comprising at least an acid having a single site of a group which disassociates a proton. At best, the Japanese document illustrates a dimer structure.

Moreover, a rejection based on an English language translation for an abstract and the underlying non-English language reference is not proper.

The MPEP addresses in detail the matter of applying a non-English language reference when an English language translation is provided for only the abstract. In MPEP 706.02II, it is stated in part that "citation of and reliance upon an abstract without citation of and reliance upon the underlying scientific document is generally inappropriate where both the abstract and the underlying document are prior art" as is the case here.

The MPEP goes on to state: "To determine whether both the abstract and the underlying document are prior art, a copy of the

underlying document must be obtained and analyzed. If the document is in a language other than English and the Examiner seeks to rely on that document, a translation must be obtained so that the record is clear as to the precise facts the Examiner is relying upon in support of the rejection." (Emphasis added). As the MPEP further notes, one of the rationales for this requirement is the possibility "that the full text document will include teachings away from the invention that will preclude an obviousness rejection under 35 USC §103, when the abstract alone appears to support the rejection."

Neither applicant nor applicant's counsel is in possession of an English translation of the full document. Accordingly, it is respectfully suggested that the USPTO obtain and provide such full English language translation if the present rejection is to be maintained. Moreover, if the present rejection is maintained in the next Official Action, such next Action cannot be made final, as the applicant has not yet been given an opportunity to respond to a fully formed rejection on this topic.

Thus, in view of the above, HIRAI fails to anticipate the claimed invention.

HIRAI also fails to render obvious the claimed invention. Figures 2-5 of the present application demonstrate that selection of the claimed polybiphenylaniline and dopant provides superior results for the performance of the claimed conductive polymer in terms of battery voltage versus discharge capacity, battery

voltage versus discharge current, and the ratio of capacity to the initial capacity over the cycle number of the battery of the conductive polymer. However, the data shown in the tables of the Japanese document of HIRAI is not identified.

Thus, HIRAI fails to render obvious the claimed invention.

Therefore, withdrawal of the rejection is respectfully requested.

Claims 1-6 and 11-15 are rejected under 35 USC 103(a) as being unpatentable over KOBAYASHI et al. U.S. 4,740,436 (KOBAYASHI). This rejection is respectfully traversed.

KOBAYASHI is offered for teaching a non-aqueous secondary battery comprising a polymer of aniline derivative as a positive electrode, and the polymer is doped with acid, such as hydrochloric acid.

The position of the Official Action is that one of ordinary skill in the art would recognize poly(diphenylamine) as one of a relatively small number of polymers intended to be encompassed by the KOBAYASHI invention.

However, KOBAYASHI discloses, at best, diphenylamine, and fails to explicitly teach polybiphenylaniline.

Moreover, KOBAYASHI fails to recognize the superior results that may be obtained by a polymer based on biphenylaniline that is doped with a dopant comprising at least an acid having a single site group which disassociates proton, as opposed to a polymer based on aniline itself. The present application

compares the performance of a conductive polymer comprising polybiphenylaniline to a conductive polymer comprising polyaniline itself.

For example, Figure 2 demonstrates that the claimed conductive polymer, e.g., Example I, provides a voltage-discharge capacity substantially greater than a polymer based on polyaniline, e.g., Comparative Example 1, shown in Figure 3. Additionally, Figure 4 demonstrates that the capacity-discharge current of the claimed conductive polymer is superior of these two. Moreover, the ratio of capacity to initial capacity decreases more significantly with the number of cycles for a polyaniline based polymer, compared to a polybiphenylaniline based conductive polymer, as shown in Figure 5.

Therefore, in view of the above, KOBAYASHI fails to render obvious the claimed invention, and withdrawal of the rejection is respectfully requested.

Claims 7 and 8 are rejected under 35 USC 103(a) as being unpatentable over HIRAI in view of PIENIMAA et al. U.S. 6,110,563 (PIENIMAA). This rejection is respectfully traversed. HIRAI is offered for the reasons discussed above. The Official Action recognizes that HIRAI does not teach that the conductive polymer can be used as an electromagnetic shielding material.

PIENIMAA is offered for teaching an electromagnetic shielding that is prepared using a conductive polymer such as polyaniline. However, regardless of the ability of PIENIMAA to

teach that for which it is offered, PIENIMAA fails to remedy the deficiencies of HIRAI for reference purposes. PIENIMAA fails to recognize the superior results obtained by the claimed conductive polymer.

Therefore, withdrawal of the rejection is respectfully requested.

Claims 9, 10 and 16-18 are rejected under 35 USC 103(a) as being unpatentable over HIRAI in view of KATHIRGAMANATHAN et al. U.S. 4,992,559 (KATHIRGAMANATHAN). This rejection is respectfully traversed.

HIRAI is offered for the same reasons as discussed above. The Official Action recognizes that HIRAI does not teach the conductive polymer can be used in other devices.

KATHIRGAMANATHAN is offered for teaching electroconductive polymers can have many uses including EMI/RF shielding material, electrochromic display systems, anti-static material, ion and pH sensors and as battery electrode material. However, regardless of the ability of KATHIRGAMANATHAN to teach that for which it is offered, KATHIRGAMANATHAN fails to disclose or suggest the superior results for conductive polymer that are obtained by doping polybiphenylaniline with a dopant comprising at least an acid having a single site of a group which disassociates proton.

Therefore, withdrawal of the rejection is respectfully requested.

Claims 7 and 8 are rejected under 35 USC 103(a) as being unpatentable over KOBAYASHI in view of PIENIMAA. This rejection is respectfully traversed.

KOBAYASHI is offered for the same reasons discussed above. The Official Action recognizes that KOBAYASHI does not teach that the conductive polymer can be used as an electromagnetic shielding material.

PIENIMAA is offered for teaching an electromagnetic shielding material prepared by a conductive polymer such as polyaniline. However, regardless of the ability of PIENIMAA to teach that for which it is offered, PIENIMAA fails to remedy the deficiencies of KOBAYASHI for reference purposes. PIENIMAA fails to disclose or suggest a conductive polymer comprising polybiphenylaniline doped with a dopant comprising at least an acid having a single site of a group which disassociates proton.

Therefore, withdrawal of the rejection is respectfully requested.

Claims 9, 10 and 16-18 are rejected under 35 USC 103(a) as being unpatentable over KOBAYASHI in view of KATHIRGAMANATHAN. This rejection is respectfully traversed.

KOBAYASHI is offered for the reasons discussed above. The Official Action recognizes that KOBAYASHI does not teach that the conductive polymer can be used in other devices.

KATHIRGAMANATHAN is offered for teaching that the electroconductive polymer can have many uses, including EMI/RF

shielding material, in electrochromic display systems, anti-static material, as ion and pH sensors, and as a battery electrode material. However, regardless of the ability of KATHIRGAMANATHAN to teach that for which it is offered, KATHIRGAMANATHAN fails to disclose or suggest the claimed conductive polymer comprising a polybiphenylaniline doped with the dopant comprising at least an acid having a single site group which disassociates proton.

Therefore, withdrawal of the rejection is respectfully requested.

In view of the above, applicants believe that the present application is in condition for allowance at the time of the next Official Action. Allowance and passage to issue on that basis is respectfully requested.

The Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 25-0120 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17.

Respectfully submitted,

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